

# FUTURE FISHERIES IMPROVEMENT PROGRAM



2015

Summary Report prepared for the Montana  
State Legislature and Fish and Wildlife  
Commission



**Montana Fish,  
Wildlife & Parks**

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Cover photos:

(left) Threemile Creek bank stabilization and riparian protection (before, after construction, and nine years post-construction).

(right) Raft anglers enjoying the Missouri River, adjacent to several completed Future Fisheries Improvement Program projects involving bank stabilization, woody regeneration, and riparian fencing.

# Future Fisheries Improvement Program

## SUMMARY REPORT TO THE 2015 MONTANA LEGISLATURE AND MONTANA FISH AND WILDLIFE COMMISSION

### INTRODUCTION

The Future Fisheries Improvement Program (FFIP; MCA 87-1-272, enacted in 1995) provides funds for *“the long term enhancement of streams and stream banks, in-stream flows, water leasing, lease or purchase of stored water, and other voluntary programs that deal with wild fish and aquatic habitats.”* The FFIP was supplemented and amended in 1999 when the legislature enacted the Bull Trout and Cutthroat Trout Enhancement Program (MCA 87-1-283), which *“provides for the enhancement of spawning areas and other habitat for the natural reproduction of bull trout and cutthroat trout.”* This legislation was amended again in 2013 to open the program to **all** native fish species (statute section 87-1-283), now calling for the enhancement of native fish through habitat restoration, natural reproduction, and reductions in species competition by way of the FFIP. Once called the Bull Trout and Cutthroat Trout Enhancement Program, this supplement to the FFIP encompasses all native species and is now termed the Native Species Enhancement Program (NSEP).

The enabling legislation for the FFIP calls for Montana Fish, Wildlife & Parks (FWP) to *“present a detailed report to each regular session of the legislature on the progress of the future fisheries improvement program. The legislative report must include the department’s program activities and expenses since the last report and the project schedules and anticipated expenses for the ensuing 10 years’ implementation of the future fisheries improvement program.”*

This report summarizes program activities from 2013 to 2014, including the appointments of Future Fisheries Review Panel (Panel) members, program staffing, program appropriations, projects approved for funding, program expenditures, and a description of anticipated expenses for the ensuing 10 years. Additionally, examples of successfully completed projects funded or partially funded through the FFIP and NSEP are presented. Also included in this report is a monitoring summary and selection of results obtained from the establishment of a series of long-term photo points for completed projects.

This report can be found on the FWP website at:

<http://fwp.mt.gov/fishAndWildlife/habitat/fish/futureFisheries/legislative/>

The photos used in this document are property of FWP, or were submitted by individual project sponsors.

## PROGRAM GOALS

The overall goal for the FFIP, identified in the enabling legislation (MCA 87-1-272), is “*providing for the protection and enhancement of Montana fisheries through voluntary enhancement of spawning streams and other habitats for the natural reproduction of fish and growth of populations of wild fish.*” The Panel developed additional guidance in 1995, stating that potential projects must accomplish one or more of the following goals to be considered for funding: 1) improve or maintain fish passage; 2) restore or protect naturally functioning stream channels or banks; 3) restore or protect naturally functioning riparian areas; 4) prevent loss of fish into water diversions; 5) restore or protect essential habitats for spawning; 6) enhance stream flow in dewatered stream reaches to improve fisheries; 7) improve or protect genetically pure native fish populations; or 8) improve fishing in a lake or reservoir.

## APPOINTED FUTURE FISHERIES REVIEW PANEL MEMBERS

The enabling legislation (MCA 87-1-272 and modified by MCA 87-1-283) calls for the establishment of the Panel and identifies specific categories of representation, including but not limited to the following:

- One member who is a representative of conservation districts;
- One member with expertise in commercial agriculture;
- One member with expertise in irrigated agriculture;
- One member from the private sector who is a fisheries restoration professional;
- Two members who are licensed Montana anglers;
- One member of the House of Representatives, chosen by the Speaker of the House;
- One member of the Senate, chosen by the Committee on Committees;
- One member with expertise in silviculture;
- One member who is a Montana high school student;
- One member with an expertise in mine reclamation techniques;
- One member with expertise in fisheries; and
- One ex-officio member from the Montana Department of Transportation who has experience in highway impacts mitigation.

Panel members are selected by the Governor or a Governor’s designee. Members serve a two-year term on the panel and may be re-appointed for additional terms. An additional appointee was added by FWP, intending to include a member with expertise in hydrology/geomorphology. Members of the Panel serving during the period of this report are shown in Table 1. Because Panel members serve terms that begin and end at different times, this table reflects members that have served within the last 2 years.

**Table 1.** Future Fisheries Improvement Program review panel members 2013-2014.

<b>Category</b>	<b>Previous Member</b>	<b>Current Member<sup>1</sup></b>
<b>Conservation District</b>	A. Schwend, Sheridan	C. Peck, Billings
<b>Commercial Agriculture</b>	A. Johnstone, Wilsall	same
<b>Irrigated Agriculture</b>	J. Stone, Ovando	same
<b>Restoration Professional</b>	W. Gavin, Bozeman	K. Boyd, Bozeman
<b>Licensed Angler</b>	R. Arnold, Bozeman	J. Willauer, Butte
<b>Licensed Angler</b>	C. Fisher, Missoula	same
<b>House of Representatives</b>	No one appointed	T. Washburn, Bozeman
<b>Senate</b>	E. Walker, Billings	M. Phillips, Bozeman
<b>Silviculture/Forestry</b>	G. Frank, Missoula	T. Chute, Helena
<b>High School Student</b>	L. Luoma, Red Lodge	C. Christman, Three Forks
<b>Mine Reclamation</b>	M. Miller, Butte	same
<b>Fisheries</b>	G. Munther, Missoula	same
<b>MDT ex-officio</b>	B. Gundrum, Helena	B. Semmens, Helena
<b>Hydrologist<sup>2</sup></b>	C. Dalby, Helena	same

<sup>1</sup>until July 1, 2014<sup>2</sup>panel member category not mandated by state statute

## PROCESSES FOR APPLICATION SUBMITTAL AND FUNDING DECISIONS

Any entity that proposes a habitat project benefiting wild fish in Montana can be considered for funding under the FFIP and, if impacts to native species are significant, receive funding from the NSEP. Project applications can be submitted to FWP twice each year and are considered for the subsequent funding period; winter funding cycle applications are due December 1, and summer funding cycle applications are due June 1.

Since the last biennium, the Panel met to review project proposals four times: December 2012, June 2013, December 2013, and June 2014. Funding recommendations formulated by the Panel were then forwarded to the Montana Fish and Wildlife Commission (Commission) for final action during their regularly scheduled public meetings held in March (for the winter funding cycle) and August/September (summer funding cycle).

For each individual funding cycle, there are several avenues for public comment prior to final approval by the Commission. All submitted project applications are posted on the FWP website to provide opportunity for public review and comment. Additionally, environmental assessments (EA's) are prepared for all projects approved for funding by the Panel and include a public comment period, except for projects that fall under categorical exclusion (ARM Rule 12.2.454) or the National Environmental Policy Act. If the project is a sub-segment of a larger proposed action, EA's occasionally are completed after Commission action. Additional opportunities for public involvement and comment include attending public meetings of the Panel and attending public meetings of the Commission.

## PROGRAM STAFFING (MCA 87-1-272)

### Future Fisheries Improvement Program

The enabling legislation for the FFIP authorized the use of program funds for up to two additional full-time employees. MCA 87-1-272 states, *“In order to implement (the program) the department may expend revenue from the future fisheries improvement program for up to two additional full-time employees.”* FWP initially allocated two full time equivalents (FTE's) to the FFIP, but then instead utilized base license dollars to fund these two FTE's and their operations. By using license dollars rather than funds allocated to the FFIP, more program funds have been available to fund restoration projects.

Mark Lere and Michelle McGree were employed as FFIP staff during the report period. Mark was the Future Fisheries Improvement Program Officer (FFIPO) from 1997 to his retirement in 2014. Michelle took over as FFIPO on July 1, 2014. The FFIPO is responsible for reviewing project applications, visiting the sites of proposed projects, acting as FWP staff liaison for the Panel, developing and communicating FWP recommendations to the Panel, developing project proposals, coordinating with consultants and contractors who design and perform restoration projects, working with landowners and other citizens who need help developing project proposals, developing project agreements, processing and approving program payments associated with completed restoration work, monitoring project implementation, effectiveness, and compliance according to project agreements, and maintaining a comprehensive FFIP database.

### Native Species Enhancement Program

MCA 87-1-283 states, *“In order to implement (the program), the department may expend revenue from the bull trout and cutthroat trout enhancement program for one additional FTE and one contractor to assist the review panel.”* The single FTE was split among three individuals who, as part of their positions, were required to organize, complete, or maintain projects that were eligible for funding under this program. Currently, base license dollars are used to fund this split FTE, rather than funds allocated to the program. Only the operations costs of these three individuals were funded using NSEP dollars. Additionally, operations of the FFIPO directly associated with native fish projects were funded under the NSEP.

Individuals employed under the NSEP for fiscal years 2013-2015 include David Moser (0.5 FTE), who is responsible to westslope cutthroat trout restoration in FWP's Region 4 and Carol Endicott (0.5 FTE), who is responsible for Yellowstone cutthroat trout restoration in the upper and mid-Yellowstone drainages located in FWP's Regions 3 and 5. Expenditures for operations associated with the NSEP since the last report period (covering from November 1, 2012 through October 31, 2014) totaled \$8,861.97.

## PROGRAM APPROPRIATIONS

The FFIP has been funded using general license dollars and River Restoration funds, while the NSEP has been funded primarily with Resource Indemnity Trust (RIT) funds and a small amount of general license dollars (Table 2). River Restoration funds (MCA 87-1-257-258) are derived from a \$0.50 earmark on resident fishing licenses and a \$1.00 earmark on non-resident fishing licenses. NSEP funds (formerly the Bull Trout and Cutthroat Trout Enhancement Program) are derived from appropriations to the RIT fund (MCA 15-38-202). Past appropriations included \$510,000 specifically earmarked by the 1995 legislature (26306, EI25) for the



purpose of constructing a fish screen on the T&Y Diversion located on the Tongue River to prevent the loss of fish down the irrigation canal.

Since the inception of each program, FFIP appropriations have totaled \$7,458,000, and NSEP appropriations have totaled \$6,900,000, averaging \$745,800 per biennium (10 biennia) and \$862,500 per biennium (8 biennia), respectively (Table 2).

**Table 2.** A summary of legislative appropriations by fund and subclass made to the Future Fisheries Improvement Program (FFIP, composed of General License and River Restoration funds) and to the Native Species Enhancement Program (NSEP, composed primarily of RIT funds and showing BT/CT designations) since the inception of each program. BT/CT = Bull Trout and Cutthroat Trout Enhancement Program; RIT = Resource Indemnity Trust Fund.

LEGISLATIVE SESSION	FUND AND SUBCLASS	AMOUNT
1995	General License, 26306, E125 (earmarked)	\$510,000.00
	River Restoration, 26301	\$290,000.00
	General License, 02409, ET30	\$220,000.00
	General License, 02409, ET2	\$1,250,000.00
1997	River Restoration, 02149, 28466	\$70,000.00
	General License, 02409, E131	\$1,310,000.00
1999	River Restoration, 02149, E190	\$300,000.00
	General License, 02409, E131	\$1,170,000.00
	General License, 02409, 38011 (BT/CT)	\$750,000.00
2001	River Restoration, 02149, E1115	\$260,000.00
	General License, 02409, E1115	\$750,000.00
	RIT, 02022, E1115 (BT/CT)	\$850,000.00
2003	River Restoration, 02149, E1131	\$210,000.00
	RIT, 02022, E1131 (BT/CT)	\$700,000.00
2005	River Restoration, 02149, E1150	\$190,000.00
	RIT, 02022, E1150 (BT/CT)	\$1,000,000.00
2007	River Restoration, 02149, E1170	\$314,000.00
	RIT, 02022, E1170 (BT/CT)	\$1,000,000.00
2009	River Restoration, 02149, E1109	\$150,000.00
	RIT, 02022, E1109 (BT/CT)	\$1,000,000.00
2011	River Restoration, 02149, E1001	\$274,000.00
	RIT, 02022, E1001 (BT/CT)	\$1,000,000.00
2013	River Restoration, 02149, E1003	\$190,000.00
	RIT, 02022, E1003	\$600,000.00
TOTALS	FFIP (License + River Restoration)	\$7,458,000.00
	NSEP (RIT + BT/CT funds)	\$6,900,000.00
		\$14,358,000.00



## PROGRAM SUMMARY

From the inception of the two programs until October 31, 2014, the Panel and Commission have approved funding requests (full or partial) for 676 restoration projects (Table 3). Of these projects, 521 have been completed, 22 are ongoing, 18 are pending, and 109 have been cancelled. All program funds previously committed to cancelled projects were subsequently reallocated to fund new habitat projects. The reasons for cancellations vary greatly, but five of the most common reasons are:

- The applicant used other funding sources to complete the project.
- The landowner was unwilling to sign a project agreement. These project agreements apply to all funded projects and are put in place to ensure that there is protection for the investment in restoration (typically 20 years).
- The applicant was unable to secure the matching funds that were identified in the application.
- The landowner was never fully on board with the proposed project and backed out after funds were approved.
- The scope of the project significantly changed after funding was secured, requiring the applicant to re-apply to the FFIP or seek other sources of funding.

Since implementation of the FFIP in 1996, the Commission has approved \$14,358,000 for restoration projects (for both FFIP and NSEP) which, in turn, generated approximately \$41,550,000 in available matching funds. Matching funds come from a wide array of sources, including federal agencies, state agencies, sports groups, conservation groups, watershed groups, private foundations, private companies, and landowners. Overall, nearly \$56,000,000 of habitat restoration work has been undertaken in Montana since 1996 as a result of the FFIP.

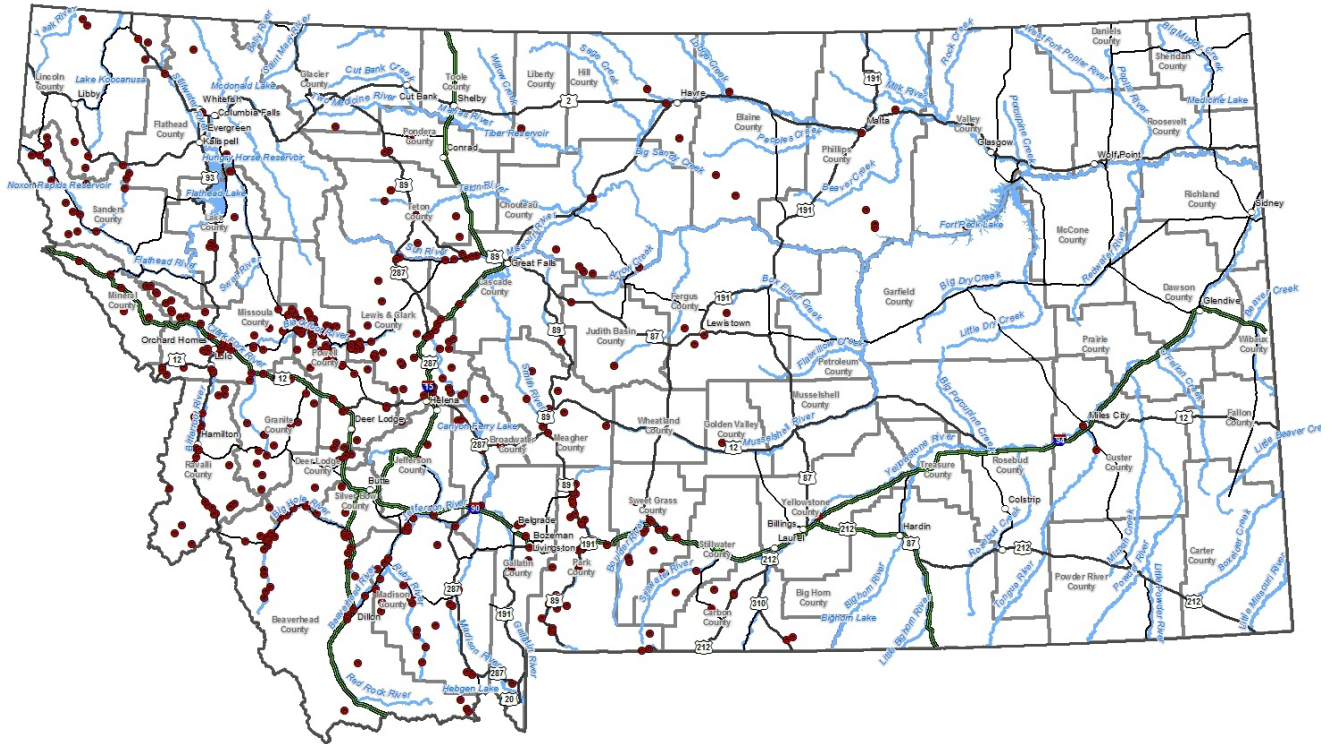
Projects have been completed statewide (Figure 1) since 1996. However, fewer projects have been completed in eastern Montana. Because the NSEP funding originally targeted cutthroat trout and bull trout projects, those funds were limited to western Montana. In 2013, NSEP funding was expanded to include all native fish, opening up opportunities for funding in additional areas. In the future, increasing habitat enhancement in eastern MT will be a priority.

**Table 3.** The status of projects funded by the Future Fisheries Improvement Program and the Native Species Enhancement Program, by year, from 1996 (start of program implementation) through October 31, 2014.

YEAR	# COMPLETE	# ONGOING	# PENDING	# CANCELLED	TOTAL
1996	41			7	48
1997	39			6	45
1998	39			10	49
1999	43			7	50
2000	36			8	44
2001	27			8	35
2002	32	2*		7	41
2003	32			9	41
2004	32			7	39
2005	27			4	31
2006	25	2*		13	40
2007	34			2	36
2008	18			9	27
2009	26	1†		3	31
2010	27	2	2	2	33
2011	21		3	6	30
2012	10	6	1	1	18
2013	10	5	4		19
2014	2	9	8		19
<b>TOTALS</b>	<b>521</b>	<b>22</b>	<b>18</b>	<b>109</b>	<b>676</b>

\* ongoing maintenance (siphon or fish screen)

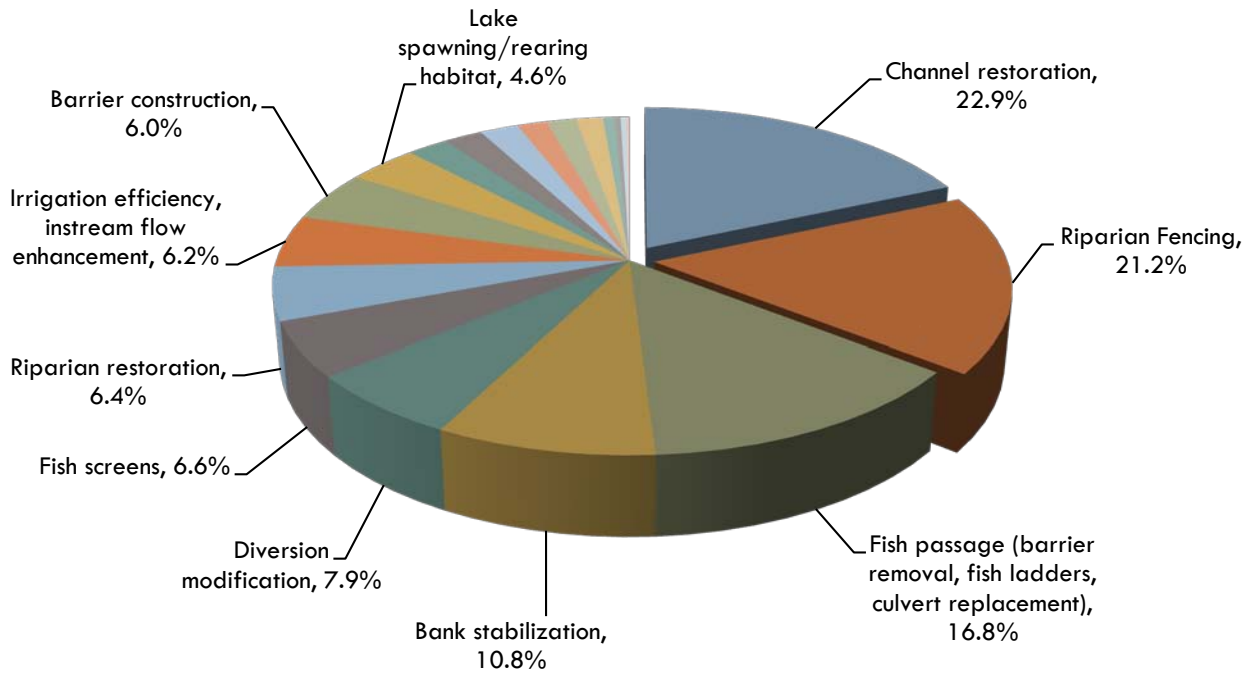
† 10 year water lease



**Figure 1.** Completed projects, funded by the Future Fisheries Improvement Program (and including the Native Species Enhancement Program). Red circles symbolize project locations.

Over the years, program funds have been used to complete many types of lake and stream habitat enhancements; however, many of the projects involved either channel restoration or riparian fencing (Figure 2). It is common for a project to involve many components of stream restoration, but channel restoration and riparian fencing were a part of approximately 44% of completed projects. Additional prevalent restoration activities included bank stabilization, culvert replacement, diversion modification, fish screens, riparian restoration, instream flow enhancement, and barrier construction (native fish protection). Other less common types (not labeled on Figure 2) included lake habitat improvements, grazing management plans, spawning habitat enhancement, addition of wood to the stream, plantings, instream cover, and pond construction.

In 2013 and 2014, a majority of approved projects involved channel restoration and riparian fencing. Other common project activities included culvert replacement, diversion modification, and barrier construction. Instream flow and/or water leases were also a part of several projects (see 2013 and 2014 project descriptions below). Examples of channel restoration activities include improving stream function by adding meander bends to channelized reaches, or the addition or renovation of pools, riffles, and runs. Riparian fencing projects typically involve the creation of vegetative buffer between the stream and livestock, allowing for riparian plant growth and increased stream and streambank health.



**Figure 2.** Habitat enhancement categories associated with Future Fisheries Improvement Program projects, and the percent of projects associated with each type. Categories that are not labeled include grazing management plan development, spawning habitat enhancement, grade control installation, woody debris addition, planting riparian vegetation, instream cover enhancement, pond construction, and shoreline protection. Percentages add up to over 100%, as some projects included multiple categories.

## PROGRAM PROJECTS AND EXPENDITURES (11/01/12 TO 10/31/14)

During the period of this report, the Commission approved funding or partial funding for 38 restoration projects in 17 Montana counties totaling \$1,378,125 (Table 4). These projects derived an additional \$4,689,485 in matching funds and in-kind services from outside sources, making the total committed funds \$6,067,610. Of the 38 restoration projects approved, 12 were funded under the FFIP, and 26 were funded under the NSEP. Narrative descriptions of individual projects can be found on page 15.

Table 5 details all of the restoration projects funded by the FFIP that have been active (funding has been committed) since the last report period, as well as all of the associated expenditures (November 1, 2012 to October 31, 2014). A total of \$907,544.51 was expended on 46 restoration projects, and a total of \$8,861.97 was expended on operations. The amount expended on operations was less than the previous biennium, as the majority of operations funding is now taken out of general license funds. Of the 82 projects listed in Table 5, 35 projects have been completed and 47 projects remain active.

**Table 4.** A listing of Future Fisheries Improvement Program (FFIP) projects approved by the Fish and Wildlife Commission and their status for the report period 11/01/12 to 10/31/14. Projects in bold and italics were funded by the Native Species Enhancement Program.

FFIP #		PROJECT NUMBER, NAME & YEAR	APPLICANT	PROGRAM FUNDS COMMITTED BY COMMISSION (\$)	MATCHING FUNDS (\$)	TOTAL FUNDS COMMITTED (\$)
		<b>2013 WINTER FUNDING CYCLE</b>				
002-13	<b>1</b>	<b><i>Dry Fork Belt Creek fish barrier</i></b>	<b><i>FWP</i></b>	<b><i>10,000</i></b>	<b><i>144,200</i></b>	<b><i>154,200</i></b>
003-13	<b>2</b>	<b><i>Harvey Creek fencing and fish screen</i></b>	<b><i>TU</i></b>	<b><i>16,126</i></b>	<b><i>46,327</i></b>	<b><i>62,453</i></b>
004-13	<b>3</b>	<b><i>Kennedy Creek mine reclamation</i></b>	<b><i>TU</i></b>	<b><i>37,240</i></b>	<b><i>296,046</i></b>	<b><i>333,286</i></b>
005-13	<b>4</b>	<b><i>Klondike Creek culvert to bridge</i></b>	<b><i>TU</i></b>	<b><i>26,000</i></b>	<b><i>133,703</i></b>	<b><i>159,703</i></b>
006-13	5	Lost Creek instream flow	Clark Fork Coalition	6,000	10,050	16,050
007-13	<b>6</b>	<b><i>Lost Horse Creek siphon</i></b>	<b><i>Clark Fork Coalition</i></b>	<b><i>93,500</i></b>	<b><i>225,065</i></b>	<b><i>318,565</i></b>
008-13	<b>7</b>	<b><i>McVey Creek fencing and bridge</i></b>	<b><i>FWP</i></b>	<b><i>17,480</i></b>	<b><i>10,920</i></b>	<b><i>28,400</i></b>
009-13	8	Moose Creek riparian fence	Big Hole Foundation	5,000	12,126	17,126
010-13	<b>9</b>	<b><i>Pearson Creek channel restoration</i></b>	<b><i>TU</i></b>	<b><i>35,000</i></b>	<b><i>59,300</i></b>	<b><i>94,300</i></b>
011-13	10	Poindexter Slough channel restoration & flow	Watershed group	63,643	309,089	372,732
012-13	<b>11</b>	<b><i>Sawpit Creek mine reclamation</i></b>	<b><i>TU</i></b>	<b><i>28,200</i></b>	<b><i>131,691</i></b>	<b><i>159,891</i></b>
013-13	<b>12</b>	<b><i>Shields River Chadbourne fish barrier</i></b>	<b><i>FWP</i></b>	<b><i>126,949</i></b>	<b><i>204,550</i></b>	<b><i>331,499</i></b>
015-13	<b>13</b>	<b><i>South Fork Poorman Creek road relocation</i></b>	<b><i>TU</i></b>	<b><i>16,000</i></b>	<b><i>117,645</i></b>	<b><i>133,645</i></b>
016-13	<b>14</b>	<b><i>SF Sixteenmile Creek fish barrier</i></b>	<b><i>USFS</i></b>	<b><i>79,752</i></b>	<b><i>102,210</i></b>	<b><i>181,962</i></b>
017-13	<b>15</b>	<b><i>South Woodward Creek bridge repair</i></b>	<b><i>Land Trust</i></b>	<b><i>24,600</i></b>	<b><i>36,862</i></b>	<b><i>61,462</i></b>
		<b>SUBTOTAL 2013 winter funding cycle</b>		<b>585,490</b>	<b>1,839,784</b>	<b>2,425,274</b>
		<b>2013 SUMMER FUNDING CYCLE</b>				
018-13	16	Big Hole River diversion repair	Landowner	12,500	2,500	15,000
019-13	<b>17</b>	<b><i>Brazel Creek channel stabilization</i></b>	<b><i>TU</i></b>	<b><i>10,700</i></b>	<b><i>21,920</i></b>	<b><i>32,620</i></b>
023-13	<b>18</b>	<b><i>Redwater River culvert fish passage</i></b>	<b><i>FWP</i></b>	<b><i>100,000</i></b>	<b><i>205,628</i></b>	<b><i>305,628</i></b>
024-13	19	Tenmile Creek diversion repair	FWP	32,350	23,051	55,401
		<b>SUBTOTAL 2013 summer funding cycle</b>		<b>155,550</b>	<b>253,099</b>	<b>408,649</b>
		<b>2014 WINTER FUNDING CYCLE</b>				
001-14	1	Bozeman Creek channel restoration	Community group	30,000	219,000	249,000
002-14	<b>2</b>	<b><i>Cabin Creek fish barrier</i></b>	<b><i>USFS</i></b>	<b><i>75,000</i></b>	<b><i>364,000</i></b>	<b><i>439,000</i></b>
003-14	<b>3</b>	<b><i>French Creek fish barrier</i></b>	<b><i>FWP</i></b>	<b><i>73,000</i></b>	<b><i>255,000</i></b>	<b><i>328,000</i></b>
004-14	<b>4</b>	<b><i>Gleason Creek fish passage</i></b>	<b><i>TU</i></b>	<b><i>10,000</i></b>	<b><i>48,650</i></b>	<b><i>10,000</i></b>
005-14	<b>5</b>	<b><i>Johnson Creek riparian fencing</i></b>	<b><i>FWP</i></b>	<b><i>8,200</i></b>	<b><i>2,000</i></b>	<b><i>10,200</i></b>
006-14	6	Keep Cool Creek fish passage	TU	6,000	10,552	16,552
008-14	<b>7</b>	<b><i>Shields River fish barrier</i></b>	<b><i>FWP</i></b>	<b><i>119,775</i></b>	<b><i>275,450</i></b>	<b><i>395,225</i></b>
009-14	<b>8</b>	<b><i>Stony Creek fish passage and screen</i></b>	<b><i>TU</i></b>	<b><i>23,774</i></b>	<b><i>25,039</i></b>	<b><i>48,813</i></b>
010-14	<b>9</b>	<b><i>Browns Gulch channel restoration</i></b>	<b><i>Watershed group</i></b>	<b><i>29,960</i></b>	<b><i>68,225</i></b>	<b><i>98,185</i></b>
		<b>SUBTOTAL 2014 winter funding cycle</b>		<b>375,709</b>	<b>1,267,916</b>	<b>1,594,975</b>
		<b>2014 SUMMER FUNDING CYCLE</b>				
011-14	<b>10</b>	<b><i>Bean Creek channel restoration</i></b>	<b><i>USFWS</i></b>	<b><i>14,945</i></b>	<b><i>95,035</i></b>	<b><i>109,980</i></b>
012-14	<b>11</b>	<b><i>Deadmans Basin Diversion Dam fishway</i></b>	<b><i>FWP</i></b>	<b><i>82,400</i></b>	<b><i>707,942</i></b>	<b><i>790,342</i></b>
013-14	12	East Gallatin restoration at Story Mill	Land Trust	51,953	120,341	172,294
014-14	13	Keep Cool Creek fish passage improvement	TU	8,500	19,722	28,222
016-14	<b>14</b>	<b><i>Liverpool Cr fish passage/entrainment/flow</i></b>	<b><i>TU</i></b>	<b><i>11,255</i></b>	<b><i>33,187</i></b>	<b><i>44,442</i></b>
017-14	<b>15</b>	<b><i>N.F. Blackfoot R. instream flow enhancement</i></b>	<b><i>TU</i></b>	<b><i>35,000</i></b>	<b><i>187,509</i></b>	<b><i>222,509</i></b>
020-14	16	Prickly Pear Spring Creek bank stabilization	FWP	6,323	28,050	34,373
021-14	<b>17</b>	<b><i>Sauerkraut Cr phase 2 channel restoration</i></b>	<b><i>TU</i></b>	<b><i>34,500</i></b>	<b><i>132,180</i></b>	<b><i>166,680</i></b>
022-14	18	Spokane Creek riparian fence	FWP	1,400	0	1,400
023-14	19	Tenmile Creek bank stabilization and fencing	FWP	15,100	4,720	19,820
		<b>SUBTOTAL 2014 summer funding cycle</b>		<b>261,376</b>	<b>1,328,686</b>	<b>1,590,062</b>
		<b>GRAND TOTAL 2013-2014</b>		<b>1,378,125</b>	<b>4,689,485</b>	<b>6,018,960</b>

**Table 5.** Program expenditures from November 1, 2012 to October 31, 2014. Expenditures are separated by the program (Native Species Enhancement Program, RIT funds = 02022; Future Fisheries Improvement Program = 02149) and spending authority subclass (EI001-EI170).

Program Expenditures (November 1, 2012 - October 31, 2014)										
PROJECTS			02022			02149			Expenditures for Report Period	Balance of Committed Funds
PROJ ID	Project Name	Status	EI001	EI003	EI109	EI001	EI150	EI170		
033-02	Bitterroot River Republican Ditch fish screen	Complete*							\$0.00	\$12,249.48
048-02	Skalkaho Creek fish screens	Complete*			\$118.03				\$118.03	\$42,976.15
039-06	Skalkaho Creek Hedge siphon supplement	Complete*	-\$3,300.00		\$6,600.00				\$3,300.00	\$62,560.96
040-06	Skalkaho Creek Republican siphon supplement	Complete*			\$3,300.00				\$3,300.00	\$64,122.00
001-09	Big Creek water lease extension	Ongoing			\$31,000.00				\$31,000.00	\$62,063.00
032-09	N. Fk Fridley Creek instream flow lease	Complete			\$38,160.00				\$38,160.00	\$0.00
005-10	Fleshman Creek flood control	Complete					\$7,100.98	\$86,499.02	\$93,600.00	\$0.00
012-10	Mandeville Creek channel restoration	Ongoing						\$1,092.00	\$1,092.00	\$23,908.00
028-10	Big Spring Creek channel restoration	Ongoing							\$0.00	\$50,000.00
031-10	Cow Creek dam enhancement & in-stream flow	Complete					\$73,705.00		\$73,705.00	\$0.00
033-10	Harvey Creek riparian fencing	Complete			\$4,025.00				\$4,025.00	\$0.00
037-10	Nevada Creek fish screen	Ongoing							\$0.00	\$10,000.00
039-10	NF Frazier Creek culvert fish passage	Complete			\$4,420.00				\$4,420.00	\$0.00
040-10	Poindexter Slough channel restoration & flow	Pending							\$0.00	\$25,000.00
003-11	Big Hole River riparian fencing	Complete					\$4,200.00		\$4,200.00	\$0.00
006-11	Crawford Creek fish barrier	Complete			\$26,000.00				\$26,000.00	\$0.00
009-11	Little Boulder Creek culvert to bridge	Complete			\$10,000.00				\$10,000.00	\$0.00
024-11	Willow Creek channel restoration	Complete	\$0.00		\$43,357.03				\$43,357.03	\$0.00
025-11	Willow Springs Creek off site water	Pending							\$0.00	\$2,828.00
026-11	Big Hole River drainage 9 fish ladders	Complete						\$17,900.00	\$17,900.00	\$0.00
027-11	Big Spring Creek Machler supplement	Ongoing							\$0.00	\$105,000.00
028-11	Boulder River fish passage and ditch side channel	Complete						\$24,103.70	\$24,103.70	\$0.00
029-11	Chaffin Creek fish screen	Pending							\$0.00	\$11,779.00
031-11	Frazier Creek fish passage	Complete			\$12,000.00				\$12,000.00	\$0.00
033-11	Red Rock River drainage culvert replacements	Complete						\$34,025.00	\$34,025.00	\$0.00
035-11	Smith Lake dam repair	Complete					\$2,252.25		\$2,252.25	\$0.00
036-11	SF Nemote Creek	Complete			\$1,350.00				\$1,350.00	\$0.00
037-11	Wegner/Missouri River riparian fencing	Ongoing							\$0.00	\$24,204.00
003-12	Greenhorn Creek fish barrier	Complete			\$60,400.60				\$60,400.60	\$0.00
004-12	Haskill Creek channel stabilization	Complete						\$10,909.54	\$10,909.54	\$0.00
006-12	Little Otter Creek corral relocation	Ongoing						\$4,000.00	\$4,000.00	\$2,020.00
007-12	Racetrack Creek channel stabilization	Ongoing							\$0.00	\$26,389.00
008-12	Ruby River Channel Stabilization	Ongoing							\$0.00	\$40,661.00
009-12	Skalkaho Creek culvert to bridge	Complete			\$5,000.00				\$5,000.00	\$0.00
010-12	SF of NF Divide Creek culvert fish passage	Complete	\$2,000.00						\$2,000.00	\$0.00
011-12	Twin Creek mine reclamation	Complete			\$40,101.12				\$40,101.12	\$0.00
013-12	Browns Gulch fish passage/channel stabilization	Ongoing	\$1,625.38		\$2,085.95				\$3,711.33	\$24,428.67



Program Expenditures (November 1, 2012 - October 31, 2014)										
PROJECTS			02022			02149			Expenditures for Report Period	Balance of Committed Funds
PROJ ID	Project Name	Status	EI001	EI003	EI109	EI001	EI150	EI170		
014-12	Cottonwood Creek riparian fencing	Complete			\$6,448.00				\$6,448.00	\$0.00
015-12	Madison River riparian fencing	Complete				-\$2,177.00	\$2,177.00		\$0.00	\$0.00
016-12	Miner Creek riparian enhancement	Ongoing			\$26,607.35				\$26,607.35	\$10,055.65
018-12	Sauerkraut Creek fish screen & instream flow	Complete			\$11,630.00				\$11,630.00	\$0.00
019-12	Sixmile Creek fish barrier	Complete			\$208.42				\$208.42	\$0.00
020-12	Smith River riparian fencing	Pending							\$0.00	\$10,000.00
021-12	Swamp Creek siphon	Pending				\$712.00			\$712.00	\$29,288.00
002-13	Dry Fork Belt Creek fish barrier	Pending							\$0.00	\$10,000.00
003-13	Harvey Creek fencing and fish screen	Ongoing							\$0.00	\$16,126.00
004-13	Kennedy Creek mine reclamation	Pending							\$0.00	\$37,240.00
005-13	Klondike Creek culvert to bridge	Complete			\$20,800.00				\$20,800.00	\$0.00
006-13	Lost Creek instream flow	Complete				\$3,000.00		\$3,000.00	\$6,000.00	\$0.00
007-13	Lost Horse Creek siphon	Ongoing	\$36,118.00						\$36,118.00	\$66,732.00
008-13	McVey Creek fencing and bridge	Complete	\$15,575.00						\$15,575.00	\$0.00
009-13	Moose Creek riparian fence	Complete						\$5,000.00	\$5,000.00	\$0.00
010-13	Pearson Creek channel restoration	Complete			\$35,000.00				\$35,000.00	\$0.00
011-13	Poindexter Slough channel restoration & flow	Pending							\$0.00	\$63,643.00
012-13	Sawpit Creek mine reclamation	Ongoing							\$0.00	\$28,200.00
013-13	Shields River Chadbourne fish barrier	Complete	\$0.00		\$126,949.00				\$126,949.00	\$0.00
015-13	South Fork Poorman Creek road relocation	Complete	\$12,960.00						\$12,960.00	\$0.00
016-13	SF Sixteenmile Creek fish barrier	Pending							\$0.00	\$79,752.00
017-13	South Woodward Creek bridge repair	Complete	\$0.00		\$7,286.14				\$7,286.14	\$0.00
018-13	Big Hole River diversion repair	Complete						\$12,500.00	\$12,500.00	\$2,500.00
019-13	Braziel Creek channel stabilization	Complete			\$10,700.00				\$10,700.00	\$0.00
023-13	Redwater River culvert fish passage	Ongoing							\$0.00	\$100,000.00
024-13	Tenmile Creek diversion repair	Ongoing							\$0.00	\$32,350.00
001-14	Bozeman Creek channel restoration	Pending							\$0.00	\$30,000.00
002-14	Cabin Creek fish barrier	Pending							\$0.00	\$75,000.00
003-14	French Creek fish barrier	Pending							\$0.00	\$73,000.00
004-14	Gleason Creek fish passage	Complete		\$10,000.00					\$10,000.00	\$0.00
005-14	Johnson Creek riparian fencing	Complete	\$8,945.40		\$74.60				\$9,020.00	\$0.00
006-14	Keep Cool Creek fish passage	Ongoing							\$0.00	\$6,000.00
008-14	Shields River fish barrier	Ongoing							\$0.00	\$119,775.00
009-14	Stony Creek fish passage and screen	Ongoing							\$0.00	\$23,774.00
010-14	Browns Gulch channel restoration	Ongoing							\$0.00	\$29,960.00
011-14	Bean Creek Channel Restoration	Pending							\$0.00	\$14,945.00
012-14	Deadmans Basin Diversion Dam Fishway	Pending							\$0.00	\$82,400.00



Program Expenditures (November 1, 2012 - October 31, 2014)										
PROJECTS			02022			02149			Expenditures for	Balance of
PROJ ID	Project Name	Status	EI001	EI003	EI109	EI001	EI150	EI170	Report Period	Committed Funds
013-14	East Gallatin Restoration at Story Mill	Ongoing							\$0.00	\$51,953.00
014-14	Keep Cool Creek Fish Passage Improvement	Ongoing							\$0.00	\$8,500.00
016-14	Liverpool Cr Fish Passage/Entrainment/Flow	Ongoing							\$0.00	\$11,255.00
017-14	N.F. Blackfoot R. Instream Flow Enhancement	Ongoing							\$0.00	\$35,000.00
020-14	Prickly Pear Spring Creek Bank Stabilization	Pending							\$0.00	\$6,323.00
021-14	Sauerkraut Cr Phase 2 Channel Restoration	Ongoing							\$0.00	\$34,500.00
022-14	Spokane Creek Riparian Fence	Pending							\$0.00	\$1,400.00
023-14	Tenmile Creek Bank Stabilization and Fencing	Pending							\$0.00	\$15,100.00
SUB-TOTALS			\$73,923.78	\$10,000.00	\$533,621.24	\$1,535.00	\$89,435.23	\$199,029.26	\$907,544.51	\$1,694,960.91
73643	OPERATION EXPENSES				\$8,861.97				\$8,861.97	\$10,922.00
GRAND TOTALS			\$73,923.78	\$10,000.00	\$542,483.21	\$1,535.00	\$89,435.23	\$199,029.26	\$916,406.48	\$1,705,882.91
*ongoing maintenance								Fund 02149	\$289,999.49	\$567,067.00
								Fund 02202	\$626,406.99	\$1,127,893.91

## NARRATIVE DESCRIPTIONS OF PROGRAM PROJECTS FUNDED (2013-2014)

Projects with an italicized title were funded under the NSEP (formerly the Bull Trout and Cutthroat Trout Enhancement Program) because they restored habitat for bull trout, cutthroat trout, or native species. Project status is as of October 31, 2014.

### 2013 PROJECT DESCRIPTIONS

1. ***DRY FORK BELT CREEK FISH BARRIER.*** Dry Fork of Belt Creek (Cascade County) is a tributary to Belt Creek located near the town of Monarch with a long history of mining activity. Mining has rendered segments of the Dry Fork uninhabitable for fish and other aquatic life. However, portions of the headwaters continue to support remnant populations of nearly genetically pure westslope cutthroat trout. These isolated populations of cutthroat trout have essentially been protected from invasion by non-native fish as a result of these highly contaminated segments acting as fish passage barriers. Recently, a negotiated settlement was reached with responsible parties to conduct mine waste clean-up in the drainage. The improvement in water quality in the stream, as a result of these ongoing clean-up efforts, has an unwanted side effect of increasing the risk of invasion by non-native fish into the headwaters where cutthroat trout reside. This project calls for the installation of a fish passage barrier approximately 2 miles upstream from the mouth to prevent the invasion by non-native fishes as the drainage is reclaimed from past mining. **PENDING.**
2. ***HARVEY CREEK DIVERSION MODIFICATION, FISH SCREEN, AND RIPARIAN FENCE.*** Harvey Creek (Granite County) is a tributary to the Clark Fork River located near the town of Drummond that supports genetically pure westslope cutthroat trout and bull trout. There presently are eight irrigation diversions on Harvey Creek, including seven ditches on the Harvey Creek Ranch and one on the Weaver Ranch. All of the diversions are considered sources of fish entrainment. This project would be a first phase in eliminating sources of entrainment from all of the Harvey Creek diversions. The project would eliminate entrainment into the uppermost diversion by replacing a push-up irrigation dam with a more permanent rock cross vane that would provide for year-round fish passage. The new diversion would include a head gate, flow-measuring device, and fish screen. In addition to modifying the diversion, the project would complete riparian fencing on the Harvey Creek Ranch to protect over 2.5 miles of the stream. Future Fisheries previously funded riparian fencing on the Harvey Creek Ranch on the east side of the stream. **ONGOING.**
3. ***KENNEDY CREEK MINE RECLAMATION.*** Kennedy Creek (Missoula County) is a tributary to Ninemile Creek that supports a mixed fish assemblage. The headwaters support genetically pure westslope cutthroat trout. Due to past mining activity, segments of Kennedy Creek in the vicinity of the Cabin and Nugget mine sites were significantly altered and routed to the southern side of the narrow valley. Waste rock, in direct contact with the channel, currently is actively eroding into the stream and hindering water quality. This project calls for removing waste rock materials from the floodplain and reconstructing about 1,000 feet of stream channel. **PENDING.**
4. ***KLONDIKE CREEK CULVERT TO BRIDGE.*** Klondike Creek (Lewis and Clark County) is a tributary to Beaver Creek and ultimately the Blackfoot River located near the town of Lincoln that supports genetically pure westslope cutthroat trout. An existing road culvert on the stream is undersized, acts as a seasonal upstream migration barrier, and is causing impairments to the stream channel.

This project calls for replacing the existing undersized culvert with a concrete bridge set on concrete footings. **COMPLETE; SEE COMPLETION PHOTOS IN SECTION BELOW.**

5. **LOST CREEK FLOW ENHANCEMENT.** Lost Creek (Deer Lodge County) is a tributary to the Clark Fork River (located near the community of Galen) that supports primarily brown trout. Chronic dewatering, elevated summer water temperatures and fish passage and entrainment issues currently constrain the fishery. The Beckstead ditch, located on the Lampert Ranch between the interstate and the confluence with the Clark Fork River, essentially dewateres Lost Creek during late summer irrigation. Approximately 1 mile of Lost Creek down to the confluence is degraded by this diversion. This project calls for entering into a 2-year diversion-reduction agreement. The hope is that this pilot project will lead to a long-term in-stream flow lease. The project proposes to pay the Lampert Ranch \$3,000 per year for 2 years for forgone production on 160 acres of irrigated pasture. The ditch head gate would be closed on July 5 each year, and all remaining flow would be kept in-stream. **COMPLETE.**
  
6. **LOST HORSE CREEK SIPHON.** Lost Horse Creek (Ravalli County) is a tributary to the Bitterroot River (located south of the town of Darby) that supports a mixed salmonid assemblage, including bull trout and westslope cutthroat trout. Presently, the Ward irrigation canal carries water diverted from the Bitterroot River across Lost Horse Creek by merging canal flow with creek flow via a gravel push-up dam. This practice dewateres the lower reach of Lost Horse Creek, blocks upstream fish migration, and entrains fish into the irrigation ditch. A university researcher identified the Ward canal as the largest source of entrainment in Lost Horse Creek. This project calls for installing a siphon underneath Lost Horse Creek to convey water diverted from the Bitterroot River down the Ward canal. The siphon would eliminate the need for constructing the seasonal in-channel dam, eliminate the presence of a seasonal migration barrier, and reduce a source of fish entrainment. Additionally, the irrigation district, which also has a water right on the stream, has agreed to enter into a formal minimum-flow agreement to provide 10 cubic feet per second of stream flow below the diversion to the Bitterroot River. **ONGOING.**
  
7. **MCVEY CREEK RIPARIAN FENCE AND BRIDGE.** McVey Creek (Beaverhead County) is a tributary to the Big Hole River (located near Wisdom), which was the site of a recent effort to re-establish a genetically pure population of westslope cutthroat trout. Current grazing management on private and state properties appears to be improving riparian conditions along the stream, with the exception of several reaches where recovery has been slow. This project calls for installing about 0.5 miles of riparian fencing on a reach located on state land where there is a lack of willow cover. Additionally, the project calls for installing a hardened water gap and replacing an existing road ford with a bridge. **COMPLETE.**
  
8. **MOOSE CREEK RIPARIAN FENCING.** Moose Creek (Silver Bow County) is a tributary to the Big Hole River (located near Divide) that supports a mixed salmonid fishery. The stream, as it flows through the Moose Creek Ranch, has been degraded from past grazing management practices. The landowner previously has fenced various sections on one side of the stream. This project calls for fencing the remaining portions of a one-mile reach of stream that would tie into the existing fence. The landowner also plans to relocate an existing calving pasture away from the stream. Approximately 1.0 mile of fence would be installed. **COMPLETE.**

9. **PEARSON CREEK CHANNEL RESTORATION.** Pearson Creek (Powell County) is a small, second-order tributary to Chamberlain Creek (located in the Blackfoot drainage) that supports slightly hybridized populations of westslope cutthroat trout, as well as brook trout and longnose sucker. The stream has been the site of a number of previous restoration activities, including a donated water lease for in-stream flow, 4,000 feet of channel restoration, riparian re-vegetation, and changes to improve grazing management. However, a portion of Pearson Creek, as it flows through the Heart-Bar-Heart Ranch, continues to be impaired. This portion of the stream is straightened, and the stream banks have been elevated with the placement of earthen berms. Additionally, an undersized county road culvert acts as a partial barrier to upstream migrating fish. This project calls for reconstructing 1,244 feet of the straightened reach to mimic features of reference reaches; replacing the undersized culvert with a larger, concrete-box culvert that would span the bank-full channel width; transplanting native shrubs; installing about 6,000 willow cuttings; and fencing the riparian corridor. **COMPLETE; SEE COMPLETION PHOTOS IN SECTION BELOW.**
10. **POINDEXTER SLOUGH CHANNEL RESTORATION.** Poindexter Slough (Beaverhead County) is a 4.7-mile-long channel of the Beaverhead River (located near Dillon), which is fed by a combination of groundwater and water diverted from the river. The lower 3.2 miles of the channel are located on a FWP fishing access site that supports a very popular fishery for rainbow trout and brown trout. FWP surveys on this slough have documented a steady decline in trout numbers over the last 12 years. This decline has been attributed to impaired riparian conditions and the loss of in-stream habitat, primarily as a result of management of stream flow that has restricted high spring flushing flows. Poindexter Slough was historically fed largely by groundwater from returning flood irrigation. With the change-over to sprinkler systems, flow in the slough needed additional diverted river water in order to meet irrigation demands. This diverted river water deposited significant quantities of fine sediment, which progressively has filled pools and inundated riffle habitat. In order to effectively mobilize and transport these fine sediment deposits, this project calls for installing a larger head gate at the top of the slough to provide adequate flushing flows. Additionally, the project calls for modifying an existing pin-and-plank diversion, located in the middle of the slough, to minimize backwater effects. A future phase would involve selectively narrowing and restoring the channel to further mobilize existing sediment deposits. **PENDING.**
11. **SAWPIT CREEK MINE RECLAMATION.** Sawpit Creek (Missoula County) is a tributary to upper Ninemile Creek that supports both brook trout and slightly hybridized westslope cutthroat trout. The Sawpit Creek drainage has been historically mined throughout the past century. As a result of this past mining activity, lower portions of the channel have been dredged, leaving the stream confined to a man-made gully. The most significantly affected reach occurs along about 1,000 feet of channel, where banks are composed of mostly unconsolidated deposits that are devoid of riparian vegetation. The stream then flows into a dredge pond just before its confluence with Ninemile Creek. This project calls for excavating and re-grading about 10,000 cubic yards of mine tailings to create a functional floodplain. Following this earthwork, approximately 1,000 feet of the disturbed channel would be reconstructed using approximately 50 step-pool structures made from rocks and logs. Stream banks would be formed using coarse cobble placed at the toe and by installing vegetated soil lifts to bank-full dimensions. Willow cuttings and containerized woody shrubs would be planted. **ONGOING.**

12. **SHIELDS RIVER CHADBOURNE DIVERSION REPAIR.** The Shields River drainage (Park County), upstream of the Chadbourne diversion, supports significant un-hybridized to slightly hybridized Yellowstone cutthroat trout populations. The Chadbourne diversion is an irrigation structure that spans the Shields River south of Clyde Park. This diversion structure historically has acted as a passage barrier to the upstream invasion of non-native rainbow trout into the upper two-thirds of the drainage. Although the diversion is largely impassable to upstream movement by both native and non-native species of fish, some rainbow trout have been able to ascend the structure under certain flow conditions, creating a threat to Yellowstone cutthroat trout populations located upstream. The diversion is currently in disrepair and is subject to potential failure. The loss of this structure would greatly threaten Yellowstone cutthroat trout populations in the drainage, as well as create a significant hardship for the water users associated with the diversion. This project calls for repairing the diversion to ensure structural soundness and retrofitting it to ensure that the structure acts as a complete barrier to upstream fish passage. **COMPLETE.**
  
13. **SOUTH FORK POORMAN CREEK ROAD RELOCATION.** South Fork Poorman Creek (Lewis and Clark County), a tributary to Poorman Creek located in the upper Blackfoot River drainage, supports populations of genetically pure westslope cutthroat trout and bull trout. Aquatic habitat on the South Fork has been negatively affected by existing road locations and undersized culvert crossings, creating excessive sediment delivery to the stream and hindering upstream fish migration. This project proposes to relocate 2,400 feet of road out of the South Fork Poorman Creek floodplain. The new location would replace five stream crossings (four fords and one undersized culvert) with a single stream crossing located on the West Fork of the South Fork Poorman Creek. The bed and banks at each of the existing stream crossings would be restored. **COMPLETE; SEE COMPLETION PHOTOS IN SECTION BELOW.**
  
14. **SOUTH FORK SIXTEENMILE CREEK FISH BARRIER.** South Fork Sixteenmile Creek (Gallatin County), located in the north Bridger Range east of the community of Maudlow, currently supports a mixed salmonid fishery. A reach of the South Fork has been identified as a potential site for restoring a native westslope cutthroat trout population. This project calls for installing a fish migration barrier that would protect about 6.5 miles of restored westslope cutthroat trout habitat. A second phase of the project would involve removing the existing non-native fishes using piscicide, followed by a third phase involving the restocking with genetically pure westslope cutthroat trout. **PENDING.**
  
15. **SOUTH WOODWARD CREEK BRIDGE REPAIR.** South Woodward Creek (Lake County), a tributary located in the Swan River drainage, contains important spawning and rearing habitat for the Swan Lake bull trout population, and routinely accounts for 30-plus bull trout redds each year. A joint plan developed for new lands added to the Swan River State Forest, as part of the Montana Legacy Project, identified restoring an existing bridge on South Woodward Creek as a priority to protect the existing bull trout population. The deck of this relatively new bridge is salvageable, but the tall, precast wing walls are failing. Should the wing walls fail, a large amount of fine sediment would be delivered into the active channel, because they retain about 100 cubic yards of fill for the two bridge approaches. This project calls for removing the existing, inappropriate-type fill located behind the wing walls, resetting and realigning the existing walls and abutments, and refilling with appropriate material. **COMPLETE.**

16. **BIG HOLE RIVER DIVERSION REPAIR.** The Big Hole River (Madison County), located near the town of Twin Bridges, supports a mixed salmonid assemblage. A series of five rock weirs were constructed across the river in 2010 as part of rehabilitating an irrigation structure owned by the Big Hole Cooperative Ditch Company. This project replaced a single diversion structure, composed of about a 4-foot elevation drop, which acted as a partial fish passage barrier and hindered boat traffic. The high water event in 2011 eroded the west ends of the second, third and fourth newly installed weir structures. This erosion damage has increased the potential for undermining the weirs, and floater passage over the structures has become more difficult because a significant amount of flow is now directed to the west side of the river. This proposal calls for repairing the damaged weirs by adding rock and tying the existing structures back into the riverbank approximately 15 to 20 feet. **COMPLETE.**
17. **BRAZIEL CREEK CHANNEL RESTORATION.** Braziel Creek (Powell County) is a small tributary to Nevada Creek (located south of Helmville) that supports a hybridized population of westslope cutthroat trout. In 2010, a reach of the stream that had been historically channelized was reconstructed, and a new grazing management plan was implemented. This 2010 project resulted in an increase in westslope cutthroat trout densities. A downstream reach of Braziel Creek, located on property owned by Jay Stitt, currently is degraded by channel incision, a lack of riparian woody vegetation, and cross-valley channel realignment. This project calls for restoring the stream channel and floodplain morphologies, restoring the riparian vegetative community, and implementing a livestock grazing management plan. Approximately 540 feet of stream channel would be restored. **COMPLETE; SEE COMPLETION PHOTOS IN SECTION BELOW.**
18. **REDWATER RIVER CULVERT FISH PASSAGE.** The Redwater River (McCone County), located south of Poplar, is one of the largest tributaries to the lower Missouri River in Montana. The Redwater River supports a very high diversity of fish species, including several Montana species of special concern (northern redbelly dace, sauger, Iowa darter and sturgeon chub). This crossing currently consists of four, 24-inch diameter, concrete culverts spaced across the stream and are perched above the streambed. The road crossing (Nickwall Crossing), located about 1.25 miles upstream from the confluence with the Missouri River, essentially blocks upstream fish passage to about 25 miles of river habitat for most of the year. This project calls for re-constructing the stream crossing by installing four, 12-foot-wide by 5-foot-tall, box culverts. The new culverts would be embedded below stream grade by about one foot and would be backfilled with gravel to provide resting areas for slower swimming fish species. **ONGOING.**
19. **TENMILE CREEK DIVERSION REPAIR AND FISH PASSAGE.** Tenmile Creek (Lewis and Clark County) is a tributary to Prickly Pear Creek (located in the Helena valley) that supports a mixed salmonid assemblage. An existing irrigation diversion has significantly deteriorated over the years and finally became inoperable after the 2011 runoff event. Recent proposals by the water users to repair the diversion would create an upstream passage barrier to fish. As an alternative, this project calls for moving the head gate upstream to provide for a more efficient withdrawal of water, along with installing a rock cross-vane to provide for upstream fish passage. Additionally, the project calls for stabilizing approximately 1,100 feet of eroding stream bank using rootwads and tree revetments; installing approximately 5,300 feet of riparian fencing; and constructing a hardened livestock crossing. **ONGOING.**

## 2014 PROJECT DESCRIPTIONS

1. **BOZEMAN CREEK AT BOGART CHANNEL ENHANCEMENT.** Bozeman Creek (Gallatin County) is a tributary to the East Gallatin River that supports a mixed salmonid assemblage. A portion of the stream, as it flows through Bogart Park within the City of Bozeman, historically was channelized. This reach of stream currently is entrenched with high, unstable banks, little hydraulic diversity, and poor fish and wildlife habitat. This proposal calls for realigning approximately 820 feet of the channelized stream to improve plan form, profile and cross sectional characteristics. Additionally, an inset floodplain would be constructed, and the riparian vegetative community would be augmented. As part of the overall project, additional recreational amenities would be installed to protect resources and better accommodate public use. The purpose of the project is to improve the stream's amenities for nature-based recreation and environmental education. **PENDING.**
2. **CABIN CREEK FISH BARRIER.** Cabin Creek (Madison County) is a tributary to the Madison River located (near Hebgen Reservoir) that supports a slightly hybridized population of westslope cutthroat trout. The 1959 Quake Lake earthquake created a scarp that effectively isolated a genetically pure, westslope cutthroat trout population residing in Cabin Creek. This scarp has slowly eroded away over time, allowing a few non-native rainbow trout to pioneer into the drainage and hybridize with native westslope cutthroat trout. This proposal calls for installing a permanent fish migration barrier at the lower end of the drainage to preserve the current level of genetic purity within this relatively large population of westslope cutthroat trout. The barrier would be located within a confined canyon and would consist of a concrete dam with two, 4-foot drops separated by a gently sloping concrete slab. **PENDING.**
3. **FRENCH CREEK FISH BARRIER.** French Creek (Deer Lodge County) is a tributary to Deep Creek, and ultimately the Big Hole River, that drains a portion of the Mount Haggin Wildlife Management area owned by FWP. The stream currently supports non-native brook trout and rainbow trout, as well as native mountain whitefish, longnose dace and mottled sculpin. This proposal calls for the installation of a permanent fish migration barrier near the mouth of the stream. The barrier would consist of a concrete dam structure with an accompanying 140-foot-long earthen berm installed across the floodplain. Once the barrier is in place, the plan is to remove all of the non-native fish using a piscicide, followed by the reintroduction of westslope cutthroat trout and arctic grayling. **PENDING.**
4. **GLEASON CREEK CULVERT REPLACEMENT.** Gleason Creek (Powell County) is a tributary to Nevada Creek located on U.S. Forest Service (USFS) property near the community of Finn. The stream supports a slightly hybridized population of westslope cutthroat and possibly some limited bull trout use. An existing USFS road culvert on the stream currently acts as a partial upstream barrier to migrating fish. This project calls for replacing the existing 48-inch culvert with a 137-inch (span) by 87-inch (rise) corrugated-steel arch pipe. A series of four rock weirs would be installed inside the new pipe to retain the streambed substrate. **COMPLETE.**
5. **JOHNSON CREEK RIPARIAN FENCING.** Johnson Creek (Silver Bow County) is a tributary to the Big Hole River (located near Wise River) that supports a slightly hybridized westslope cutthroat trout population, as well as a brook trout population. Cattle trespassing onto properties owned by Joel



Webster and John Tierney have led to trampled stream banks and over-widening of the stream channel. This project calls for installing riparian fencing that would tie into existing fencing to eliminate the cattle trespass problem. Approximately 2,200 feet of wire fence and 150 of jack-leg fence would be installed. Additionally, a cattle guard would be installed at an access road leading to private property. Livestock grazing would be excluded from the riparian corridor once the fencing is installed. **COMPLETE.**

6. **KEEP COOL CREEK CULVERT FISH PASSAGE.** Keep Cool Creek (located near Lincoln in Lewis and Clark County) is a tributary to the upper Blackfoot River. The stream supports primarily brown trout, but also supports westslope cutthroat trout in the headwaters and limited bull trout use in its lower reaches. Presently, two undersized culverts located on the Grosfield Ranch act as partial upstream migration barriers to fish. This proposal calls for replacing the lower culvert with a hardened ford, because the need for access is very limited. The upstream, 48-inch culvert would be replaced by an 8-foot, 1-inch by 6-foot, 1-inch, steel arch pipe. This new culvert would accommodate the bank-full channel width and provide for floodplain function. **ONGOING.**
7. **SHIELDS RIVER FISH BARRIER.** The Shields River (Meagher County) is one of the few remaining strongholds for native Yellowstone cutthroat trout. However, expanding brook trout populations are threatening the persistence of these native fish, especially in the headwaters. This proposal calls for constructing a fish migration barrier at an existing USFS road crossing located within the Shields River headwaters, just downstream from the confluence of Crandall Creek. The barrier structure would be a precast box culvert that would replace an existing bridge and create a 4.2-foot drop from the end of the apron. Additionally, a 130-foot-long berm would be installed along the west side of the channel to protect the existing road. By-pass pipes would be installed within the berm and in the existing road to allow for drainage during flows that exceed bank full. As part of the project, non-native brook trout would be removed from upstream waters by electro-fishing and by the use of piscicides. Salvaged Yellowstone cutthroat trout would be returned to reclaimed waters. A design component of this project allows for the new barrier to be easily removed should the opportunity to expand Yellowstone cutthroat trout conservation efforts to downstream waters arise. **ONGOING.**
8. **STONY CREEK DIVERSION FISH PASSAGE.** Stony Creek (Granite County) is a tributary to Rock Creek that supports brown trout, westslope cutthroat trout and bull trout. Radio telemetry has determined that fluvial bull trout also use Stony Creek. An irrigation diversion located just upstream of the USFS Stony Creek campground currently acts as a fish migration barrier and has been documented to entrain westslope cutthroat trout and brown trout. This diversion, owned by the Rock Creek Ranch, currently consists of a series of concrete ecology blocks and a simple screw-gate head gate. This project calls for rebuilding the diversion using a vortex rock weir structure and installing a horizontal, flat-plate fish screen and bypass. **ONGOING.**
9. **BROWNS GULCH CHANNEL RESTORATION.** Browns Gulch (located near Butte in Silver Bow County) is a tributary to Silver Bow Creek that supports brook trout in its lower reaches and westslope cutthroat trout in its headwaters. With the ongoing clean-up of Silver Bow Creek, fluvial westslope cutthroat trout now found in the creek are beginning to pioneer into the lower reaches of Browns Gulch. A reach of the stream flowing through property owned by the Ueland Ranches, Inc. was historically channelized and is currently experiencing substantial bank erosion. This project

- proposes to replace 800 feet of channelized stream with about 1,400 feet of a newly constructed meandering channel. The new channel will have an accessible floodplain and will be re-vegetated with riparian shrubs and wetland sods. Fencing will be installed to encourage the recovery of the riparian vegetation. A grazing management plan will be implemented once the riparian corridor has fully recovered. The old channel will be filled in and re-vegetated. **ONGOING.**
10. **BEAN CREEK CHANNEL RESTORATION.** Bean Creek (Beaverhead County), a tributary to the Red Rock River, supports purestrain westslope cutthroat trout. The stream reach proposed for treatment has been channelized to accommodate irrigation and reroute flows during ice jams. An undersized culvert has exacerbated ice jam problems. This proposal is to restore 800 feet of Bean Creek on private property by increasing sinuosity, decreasing gradient, building 30 pools, improving riparian vegetation, and protecting the channel with riparian fence. It also includes replacing an undersized culvert at a county road crossing. **PENDING.**
  11. **DEADMANS BASIN DIVERSION DAM FISHWAY.** Deadmans Basin Diversion Dam (Wheatland County) is located on the Musselshell River approximately 19 miles downstream from Harlowton. The diversion dam was damaged by the 2011 flood, and it and the canal headgate leak water to the canal reducing flow to the river by approximately 3,000 acre-feet annually. A pool/rock-weir fishway would be constructed to improve passage for brown trout and (up to 500 cfs) several native species, including a hybrid dace species of special concern. Better water control and less leakage could improve instream flow, although no agreement for this provision accompanies this project. **PENDING.**
  12. **EAST GALLATIN RESTORATION AT STORY MILL.** The Story Mill site (Gallatin County) is located at the confluence of Bozeman Creek and the East Gallatin River within the City of Bozeman. These streams, within this vicinity, support primarily brown and rainbow trout and longnose suckers. Both streams have been modified over the years for agricultural and industrial uses, with evidence of channelizing, vegetation removal, bank armoring, and floodplain fill. This proposal includes removal of concrete debris, auto/machinery parts, etc.; removing some floodplain fill; and revegetating banks. **ONGOING.**
  13. **KEEP COOL CREEK FISH PASSAGE IMPROVEMENT.** Keep Cool Creek (Lewis and Clark County) is a spring creek that enters the upper Blackfoot River just north of Lincoln. It supports primarily brown trout, with westslope cutthroat trout found mainly in headwater tributaries. The proposed project involves replacing a pair of 24-inch culverts with a timber bridge designed to allow full channel function and aquatic organism passage. **ONGOING.**
  14. **LIVERPOOL CREEK FISH PASSAGE / ENTRAINMENT/ FLOW.** Liverpool Creek (Lewis and Clark County) is a tributary to Keep Cool Creek, which enters the upper Blackfoot River just north of Lincoln. Beginning where the creek leaves the mountains, it is disrupted by two irrigation diversions that lack headgates and require boards being placed in-channel to divert flows. A nearby stream crossing is undersized, representing a fish migration barrier. The project proposal involves replacing the undersized crossing (paired culverts) with a fish- and channel-friendly bridge, eliminating the upper irrigation diversion, upgrading the lower diversion with a fish screen, and pursuing a long-term water lease for instream flows. **ONGOING.**

15. **NORTH FORK BLACKFOOT RIVER INSTREAM FLOW ENHANCEMENT.** The North Fork Blackfoot River (Powell County) is the largest tributary to the Blackfoot River, with its confluence near Ovando. The North Fork is a bull trout, core-area stream that also supports westslope cutthroat trout. The river frequently goes dry in the late summer below the lowest diversion in the drainage. This proposal calls for replacing an existing open ditch with a pipeline that will serve systems upgraded from flood to sprinkler irrigation, resulting in flow savings that could be realized in the river; however, the instream flow agreement for this project is pending. **ONGOING.**
16. **PRICKLY PEAR SPRING CREEK BANK STABILIZATION.** This unnamed spring creek (Lewis and Clark County) enters Prickly Pear Creek approximately 6.5 miles upstream from the latter's confluence with Lake Helena. It supports brown and rainbow trout. Habitat in the spring creek has been degraded by livestock grazing, undersized culvert at a road crossing, and intrusion by Prickly Pear Creek. The latter has channel alignment and debris issues. The project calls for improving pool and riffle habitat in selected meander bends of the spring creek, replacing the culvert with a bridge, and reconnecting the original confluence with Prickly Pear Creek. **PENDING.**
17. **SAUERKRAUT CREEK PHASE 2 CHANNEL RESTORATION.** Sauerkraut Creek (Lewis and Clark County), a tributary to the upper Blackfoot River, supports genetically pure westslope cutthroat trout and bull trout. To accommodate placer mining, upper reaches of the stream were confined to the toe of the hillslope, resulting in a channel with long, extended riffles and lacking pools, vegetation, and large wood. An existing ford has damaged and lowered streambanks, altering channel morphology and causing sediment deposition. Project specifics involve relocating 770 feet of Sauerkraut Creek and restoring riffle-pool and step-pool channel morphology within a sloping, well-vegetated riparian corridor and restored floodplain. The ford crossing will be rehabilitated. **ONGOING.**
18. **SPOKANE CREEK RIPARIAN FENCE.** Spokane Creek (Lewis and Clark County) is a tributary to Hauser Lake in the Missouri River drainage near East Helena. It supports primarily rainbow and brown trout. Livestock currently have access to 190 feet of stream channel adjacent to a newly constructed bridge project, and this project would install riparian fence for an enclosure. **PENDING.**
19. **TENMILE CREEK BANK STABILIZATION AND FENCING.** Tenmile Creek (Lewis and Clark County) is a tributary to Prickly Pear Creek that enters the latter 2.3 miles upstream from Lake Helena. The stream supports brook, brown, and rainbow trout. Livestock grazing has removed riparian vegetation and accelerated erosion at two areas along the stream. This proposal calls for stabilizing 430 feet of streambank using juniper, willow, and rock, and fencing both sides of the stream (5,350 feet total) to exclude livestock. **PENDING.**